

Presidio Coastal Trail Cultural Resource Survey

Background

This survey was prepared at the request of the Golden Gate National Recreation Area and the Golden Gate National Parks Conservancy to provide information on known and possible cultural resources along the Fort Scott bluffs in preparation for the design of the Presidio Coastal Trail. This trail will be a link in the statewide California Coastal Trail.

The California Coastal Conservancy oversees the statewide implementation efforts for developing the Coastal Trail, and provides this definition of the trail:

“A continuous public right-of-way along the California Coastline; a trail designated to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation.” (California Coastal Conservancy, 2001.)

A “Presidio Trails and Bikeways Master Plan and Environmental Assessment” (aka “Trails Master Plan”) was developed jointly by the National Park Service and the Presidio Trust for that section of the Coastal Trail running through the Presidio of San Francisco, and was adopted through a Finding of No Significant Impact (FONSI) in July 2003.

The Trails Master Plan identified improvements needed to the California Coastal Trail in order to upgrade the existing route to a multi-use trail with associated bicycle lanes on Lincoln Boulevard and supporting components, such as trailheads and overlooks. This 3 mile Presidio trail section travels generally along the coastal bluffs, following Lincoln Boulevard.

The areas west and south of the Golden Gate Bridge/Highway 101 are known to have been the sites of important cultural activities over the past 200 years associated with the military and civilian histories of the Presidio of San Francisco. Remains of structures ranging in scale from monolithic concrete gun batteries to hand-dug “foxholes” are found along the proposed alignment of the Coastal Trail, and in some cases directly within its proposed route.

This survey of the Presidio Bluffs is designed to identify known and potential cultural features in the project area, and to research the possibility of previously undocumented sites, and to provide information to NPS and Park Conservancy staff. This information will help guide the Coastal Trail planners during the decision-making processes on final trail alignments and their potential impacts

The project area considered in this report can roughly be described as those parts of the Presidio lying between the Golden Gate Bridge on the north and Lobos Creek on the south, and bounded by the alignment of Lincoln Boulevard on the east. All of these areas are considered to be part of “Area A” within the Presidio, designating those properties managed directly by the National Park Service, Golden Gate National Recreation Area.

The goals of this survey project are summarized as follows:

1. Compile a concise contextual overview of the historic development of the Project Area.
2. Conduct archival and photographic research to identify structures and features that are known to have existed in the Project Area.
3. Develop a bibliography of resources used during research.
4. Perform field reconnaissance to identify surviving features and likely cultural sites in the Project Area.

5. Provide new or updated photo documentation and locations of all cultural resources with area affected by potential trail construction.
6. In association with Conservancy staff, develop GPS maps of known or predicted historic properties or areas of sensitivity.
7. Organize resource documentation, photographs and maps into thematic categories:
 - a. Permanent coastal defense fortifications and associated structures constructed between 1870 and 1945.
 - b. Emergency defense sites and field fortifications dating to World War II.
 - c. Roads and access routes, including vanished roads and streets.
 - d. Lobos Creek and 'access to water.'
 - e. Miscellaneous and unidentified features.

These work items were agreed upon in a contract between the Golden Gate National Parks Conservancy and this researcher, dated 16 September 2008.

Introduction

The line of gun batteries stretching along the Presidio bluffs south and west from the Golden Gate Bridge and extending to Lobos Creek at Baker Beach form an ‘outdoor museum’ of late 19th century to mid-20th century fortifications that are rivaled few places elsewhere in the United States. These gun batteries and their associated structures, constructed between 1870 and 1943, show the transitional nature of United States’ defenses at the time when its harbor fortification system was undergoing the change from “storybook castle forts” filled with muzzle loading cannon to modern low-profile earth and concrete fortifications mounting long range, rifled steel guns.

These batteries, referred to as “works” by the U.S. Army Engineers who constructed them, represent not only a time capsule of evolutionary military design, but also include some of the earliest of the modernized American fortifications constructed anywhere in the country. Battery Godfrey, for example, was the first “modern” major-caliber gun battery completed in the nation when its 12-inch guns roared for the first time in 1895.

In addition to the hulking battery structures, these bluffs and sand dunes also contain a wide array of smaller but no less important support structures that document the expanding role of technology in defending the nation’s coasts during the first part of the 20th century: fire control stations and range finding stations connected by telephone networks, antiaircraft gun emplacements, radar positions, and underground control casemates for the labyrinthine minefields planted outside the Golden Gate during World War II.

Least conspicuous but perhaps the most unique features preserved here are the remains of hastily-built field fortifications constructed by soldiers in the aftermath of the Japanese attack on Pearl Harbor, when the possibility of raiding parties landing on Baker Beach was a very real threat. Visitors and park staff still occasionally discover these “foxholes,”

and their fragile design and materials make them important to identify, preserve and interpret.

Other less-known stories of the Presidio bluffs include shipwrecks along the rocky shore between Baker Beach and Fort Point; a long-vanished boathouse maintained by the U.S. Life Saving Service; the development of a scenic 1910s auto boulevard through the dunes; and the continued efforts by civilians and military to divert the waters of Lobos Creek, first to slake the thirst of boom-town San Francisco during the 1850s and, later, to meet the needs of the Presidio's growing military garrison during the 20th century.

Developmental History of the Fort Scott Bluffs –

Presidio of San Francisco Cultural Eras:

I. Spanish-Mexican Settlement

II. Early U.S. Occupation

III. Civil War

Military Uses

The project area being reviewed in this report, which includes the entire western shoreline of the Presidio, was actually one of the last parts of the post to be developed. Marked by steep bluffs and blowing sand dunes, and exposed to constant westerly winds, its lack of natural resources and remoteness from the main post made it of little interest to the Spanish and Mexican military forces. Even the first American garrison in 1847 had little use for the western slope of the post, and instead put their efforts towards rebuilding the dilapidated adobe and wood buildings near today's main parade. It was the outbreak of gold fever in 1849 and the explosive growth of San Francisco during the 1850s that lead to the first developments in this area: the construction of a massive brick fortress at the tip of Fort Point to guard the harbor entrance, and the development of a private waterworks at the mouth of Lobos Creek at the extreme southwestern corner of the Presidio.

Although the military deliberated upon the need for infantry defenses along these bluffs during the Civil War, the threat of invasion was minimal and the Army focused their energies on completing the fort at Fort Point and increasing its armament. To the south of the fort, nothing was carried out in the way of fortifications until 1870.

Lobos Creek & Private Water Companies

The first known construction along the Presidio bluffs was actually a commercial, civilian operation that tapped the waters of Lobos Creek and transferred it by flume and pipe to the downtown area of the city. In 1856, the San Francisco City Water Works, popularly known as the Bensley Company, was franchised by San Francisco Order No. 46. The next year, Alexei Waldemar von Schmidt, the chief engineer of the Bensley Company, purchased part of the Lobos Creek Ranch south of the Presidio and acquired rights to half the water flowing through Lobos Creek at the southwest corner of the Presidio. (The U.S. Army claimed the other half.)¹

In 1857 the Bensley Company worked out an agreement with the Army to construct a series of flumes, tunnels and pipes across the Presidio in return for providing the main post and the fort at Fort Point with fresh water.



Figure 1. *Golden Gate and Fort Point, c1880, with the Bensley Water Company flume snaking along the Presidio bluffs.*

Getting the water from Lobos Creek to the developed areas of San Francisco became an engineering challenge since the creek lay nearly five miles away from heart of the young city. The Bensley Company dammed the mouth of Lobos Creek and constructed a wooden flume across the dunes of today's Baker Beach and along the bluffs at the foot of present-day Fort Scott. Along the bluffs midway between Fort Point and Lobos Creek, water was tapped from the flume for use of the garrison at Fort Point. Two windmills raised the water from the flume to a storage reservoir near the location of today's Immigrant Point Lookout.² According to an 1887 Army report, this tank supplied water to the garrison at Fort Point and also to the National Cemetery.

A few hundred feet south of Fort Point, the water entered a brick-lined tunnel through the bluff behind the fort and reemerged on the east side of the point where it once again entered a wooden flume. From there, the Bensley water flumes and pipes snaked across the eastern part of the Presidio, crossed the wetlands of the present Marina District, rounded the promontory of Black Point (today's Fort Mason), and finally led to a pumping station near the modern bocce ball courts at Aquatic Park.

The Lobos Creek water was then pumped through two sets of heavy double force pipes to reservoirs on the north slope of Russian Hill. The upper limit for Bensley Company production from Lobos Creek was two million gallons per day.

The U.S. Census of 1860 reported San Francisco's population as 78,000 and the forecast was for continued growth in California. George H. Ensign obtained a water charter from the California Legislature in 1858 and organized the Spring Valley Water Works, which eventually absorbed the Bensley Water Co. and the water works at Lobos Creek.³

Era IV. Indian and Military Affairs

Beginning in 1865, the American military began to reassess its system of harbor defenses. Battlefield lessons learned during the Civil War showed that multi-tiered masonry forts of the style typified by Fort Point in the Presidio had proven to be highly vulnerable to attack. During the just-finished war their towering masonry walls had proven to be inviting targets for long-range, rifled artillery fire. Instead of withstanding months of siege, some masonry forts had surrendered after only a few days of bombardment. (At Fort Pulaski in Georgia, Confederate defenders held out for only thirty hours before its 7½-foot thick walls were penetrated by Union artillery fire.)

In addition, steam powered warships could race past these masonry fortifications, suffering relatively minor damage to their ironclad hulls, especially when compared to the wind-propelled wooden warships that had been state-of-the-art when the era of masonry forts was begun.⁴



Figure 2. *The visibility and vulnerability of masonry works is illustrated by this view of the fort at Fort Point in the Presidio, c1900. (Bancroft Library)*

The U.S. Engineers carried out limited testing with armor plates attached to the faces of existing masonry forts, but with disappointing results. Iron plates frequently split or shattered when hit by projectiles, and the sheer weight of the plates presented huge installation problems. Costs were enormous, and one glaring defect in the plan could not be overlooked; as one historian wrote, “The fort was still a large, obvious target, easy to hit.”⁵

Even during these tests, the engineers’ thinking was leaning towards a radically new design based upon the simple earthen batteries erected during the Civil War. These emergency works had been constructed of copious amounts of earth and sand cover, and had very low profiles when viewed by an attacking enemy. These improvised fortifications, they noted, had been simple to build, provided excellent protection against enemy fire, and were easy to maintain and repair. Earthworks, they decided, would become be the basis of the next generation of permanent American forts.

In 1870 the Army established a special Pacific Board of Engineers to oversee construction and modernization of the works around San Francisco Bay, where new batteries were proposed for Fort Point, Alcatraz Island, Angel Island, Lime Point in Marin County, and Point San Jose (Fort Mason) in San Francisco. At Fort Point the Board proposed to construct two lines of batteries on the hills behind the old masonry fort. These works would be named West Battery and East Battery, reflecting their geographic locations atop the bluffs west and east of the now-obsolete masonry fort.

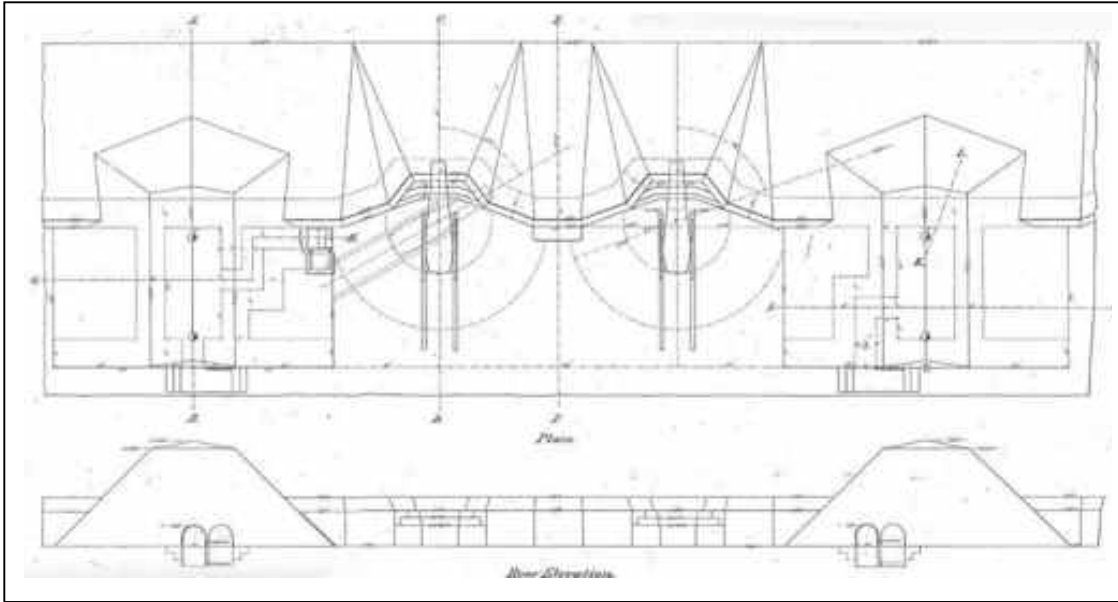
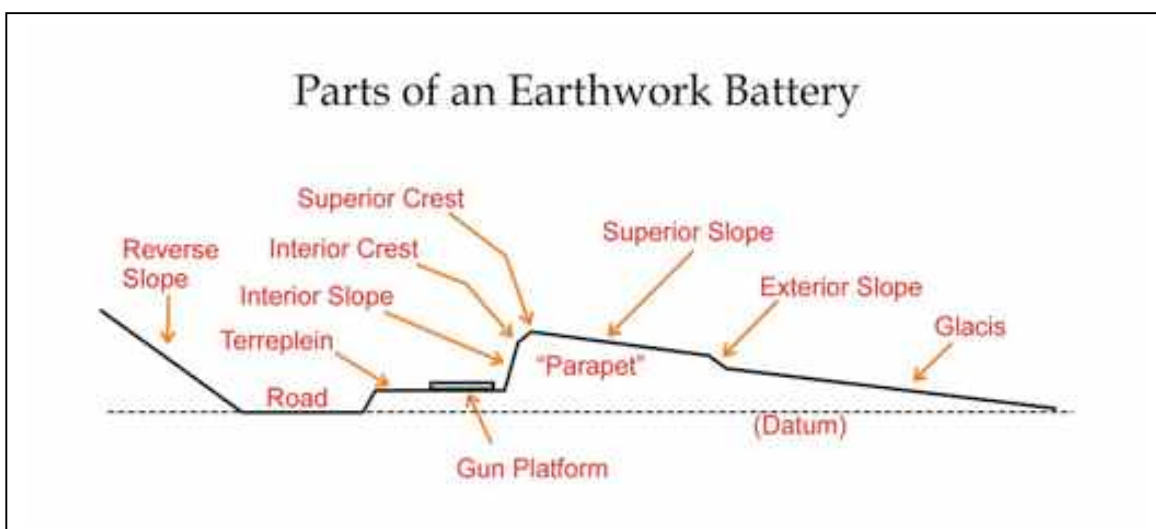
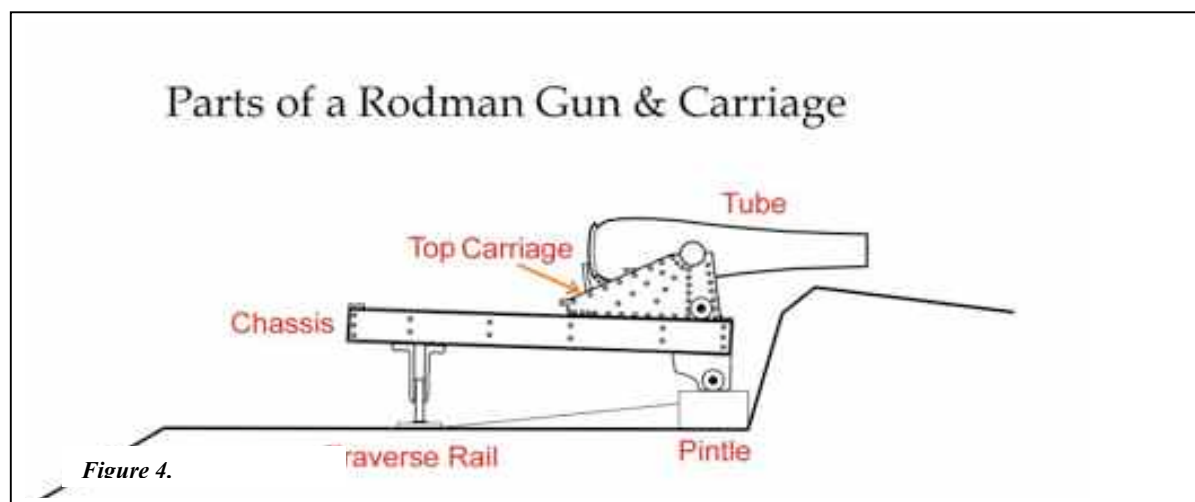


Figure 3. Prototypical plan of an earthwork drawing: “Plans Sections and Elevations of a Barbette Battery as Proposed by the Board of Engineers for Fortifications,” 1868 (NARA RG77, Dr 155, Sht 14)

These new fortifications would be low-rise affairs, extending only a dozen feet at most above grade when viewed from the sea. In order to provide maximum protection for the guns, the cannon would be emplaced in pairs, and each pair would be separated by artificial earth hills called “traverses.” Each traverse would also to contain a powder magazine for ammunition storage. Brick-lined, arched tunnels through the earthworks permitted the safe movement of men and supplies during battles.

The new plans also called for a high degree of standardization of weaponry. Instead of the hodge-podge of calibers so common in pre-Civil War forts, the new batteries would mount only four different types of guns: 13-inch smoothbore mortars; 15-inch and 20-inch Rodman pattern smoothbore guns; and a 12-inch rifled Rodman gun still under development. (Neither of the latter two gun types, however, would ever proceed beyond the test phase.)⁶



Figures 4 & 5. Section through a gun emplacement showing names of architectural features.

Historian Glen Williford described the flexibility and features of a typical “Plan of 1870” earthwork battery:

These units could be strung together like beads on a string and lines or batteries could contain twenty or more gun emplacements. ... In place of stone or brick, the plans incorporated the use of concrete – its first widespread application in American defenses.

The principal material used for the parapet itself, any glacis in front, for the high traverse covers, and for any rear parados was sand, whose availability and cost advantage were obvious. Some 30 feet of earth or sand were specified for the depth of the terreplein. Magazines had hung wooden doors, and their interiors had special niches for oil lamps.⁷

Work began in late 1870 on the construction of West Battery, as initial site grading and stockpiling of building materials began to take place. The construction of earthwork batteries at Fort Point followed very closely the guidelines set forth in the 1868 report by the Board of Engineers. (The most extensive retelling of the construction of West Battery and East Battery is contained in the National Park Service publication *Historic Structure Report: Fort Point Historic Data Section*, prepared by historian Edwin C. Bearss of the NPS in 1973.)

Guided by the concepts contained in the Washington engineers' 1868 report on earthwork fortifications, the Board of Engineers for the Pacific Coast developed an extensive scheme of defense for San Francisco Bay. The proposal was nothing if not expansive. In its original form, the Board envisioned West Battery as a series of gun and mortar positions to emplace 57 guns and 28 mortars, extending along the ridgeline from directly behind Fort Point all the way to Robb Hill in the Presidio. Its guns would face almost due west and command the approaches to the Golden Gate. Guns on its extreme right flank could also intersect with fire from batteries planned at Lime Point. (Eventually, though, the work was severely reduced in size and extended no further than today's Battery Godfrey.)

Construction work on West Battery resulted in a very visible alteration to the skyline of the Presidio Bluffs. What had previously been an area of undulating hills leading up from Fort Point now took on a serrated-edge look -- the silhouettes of the tall traverses flanking the flanking gun positions.

The supervising officer reported that West Battery was “essentially completed” on 30 June 1873. The magazines could all be used (although not all the asphaltic floors had been laid); stone platforms, gun pintles and traverse rails had been completed for twelve Rodmans; a ramp had been constructed between West Battery and East Battery; and eight wooden platforms for 13-inch mortars had been constructed in the two mortar emplacements located midway along the line of batteries. In his annual report, Col. Stewart noted that twelve 15-inch Rodmans had been emplaced, all of them in positions on the right flank of West Battery.⁸ During the construction of earthwork West Battery (1870-1876), the engineers also built a service road behind the gun positions to provide a protected roadway for wagons and troops. Sometimes called a “covered way” because traffic on it was covered from view, this road followed the alignment of present-day Bowman Road.



Figure 6. *West Battery viewed from the east showing the traverses’ distinctive outlines, circa 1880. The main post buildings of the Presidio are in the foreground. (California Historical Society)*

Work continued on West and East Batteries from 1870 until 1876, but Congress was becoming increasingly weary of funding what seemed like a never-ending series of fortification projects. And in light of the lessons of the last war, when millions of dollars of supposedly impregnable defensive works had suddenly become obsolete, the legislators began to balk at the military’s continuing national projects. Rather than

allocating money for modern armament and fortifications, Congress decided in 1876 to grant a mere \$100,000 for “preservation and repair” of fortifications, and nothing for new construction. In 1877 things became even tighter when Congress adjourned without even passing an Army appropriations bill. For all intents and purposes, work on the Plan of 1870 ceased in 1876. Except for paltry amounts allocated for repair and preservation, no serious expenditures would occur until 1890.⁹

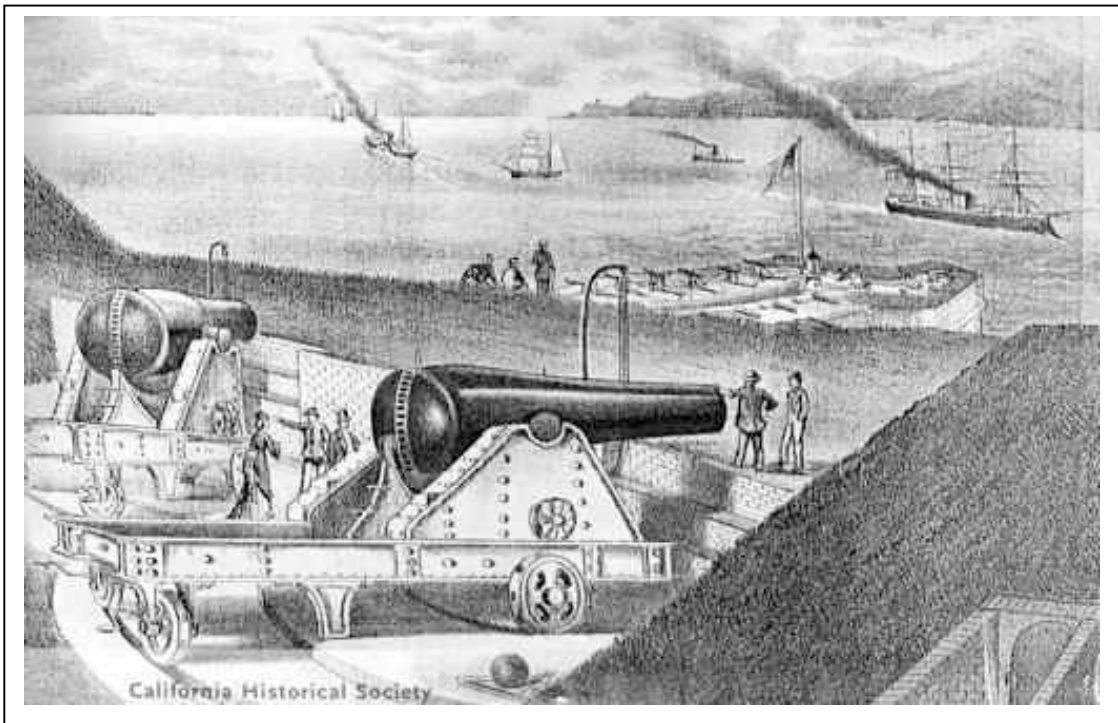


Figure 7. A pair of 15-inch Rodmans in West Battery, as depicted in an 1877 issue of “The Wasp,” a satirical San Francisco publication. The accompanying article berated the U.S. Government for wasting money on constructing obsolete fortifications. The artist took several liberties with perspective and location, since Fort Point is not visible at this angle from West Battery. (California Hist Socty)

As scarce funds became available, workers cut brush and weeds around the earthworks, repaired sodded areas on the slopes and fixed broken ventilators, cleaned brickwork, painted magazine doors, and built steps over the earthen parapets to prevent erosion.¹⁰

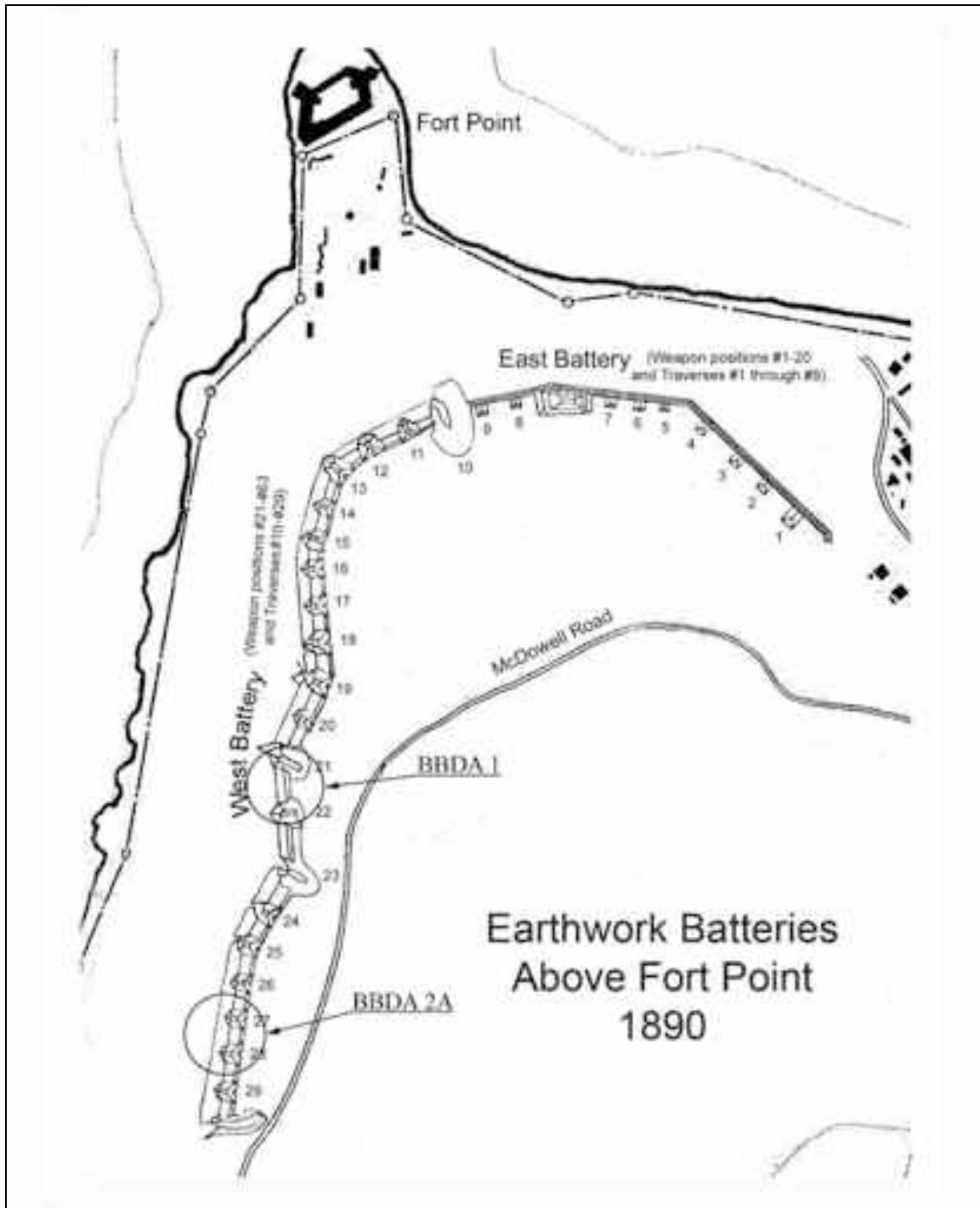


Figure 8. Drawing showing the extent of completed earthwork batteries above Fort Point in 1890. Contemporary 'Remedial Action' sites are circled at left.

Like most earthwork batteries of the “Plan of 1870”, West Battery at the Presidio was never completely armed. By the time work was suspended on the battery in mid-1876, only a twelve of planned 38 Rodman cannon had been mounted in its gun positions, and

none of the mortars were ever emplaced. The partially armed battery, together with all the other earthwork batteries still under construction around the country, entered a period of arrested decay that would last for nearly next twenty years as the War Department and Congress wrangled over plans for a new generation of weaponry and fortifications.

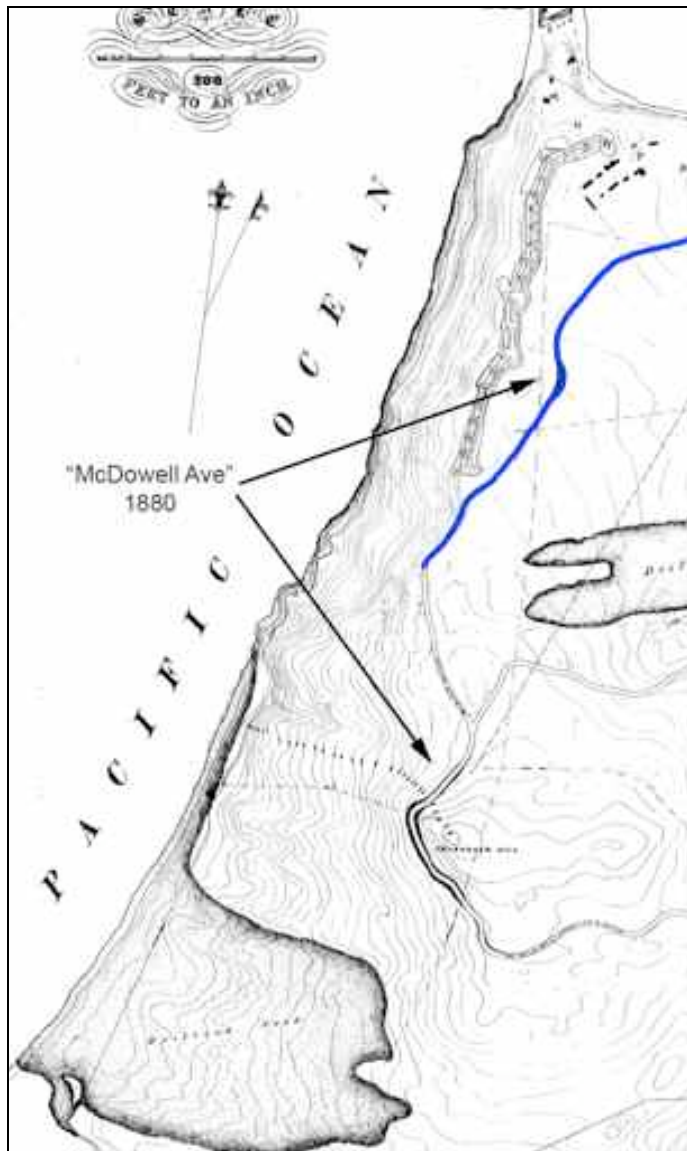


Figure 9. Project area in 1880. West Battery is at upper left. The only road in the vicinity was McDowell Avenue (above). The portion that would become the future Lincoln Boulevard is shown in blue.

Era V. Nationalistic Expansion

“By 1885, American seacoast defenses had become so weak as to be an absolute embarrassment to the country. Finally, on March 3, 1885, Congress directed President Grover Cleveland to appoint a board, chaired by Secretary of War William C. Endicott ... to ‘examine and report at what forts fortifications or other defenses are most urgently required, the character and kind of defenses best adapted for each, with reference to armament; the utilization of torpedoes, mines, or other defensive appliances...’”¹¹

The board’s recommendations became the basis for the next generation of construction that would extend from 1890 to 1910, and give rise to the designation “Endicott Era” for these fortifications.

During this period of inactivity from 1876 to 1885, numerous improvements in military technology took place that had a direct impact on America’s next generation of harbor and coastal defense fortifications. Most important of these was the development of modern artillery. Methods of manufacturing and rifling modern steel artillery pieces evolved to the point where breach-loading mechanisms could be introduced, thus allowing the use of highly efficient pointed projectiles and higher powered propellants, giving the new weapons far greater range and accuracy.¹²

In addition, military architecture had made great strides. Advances in concrete construction allowed the building of immensely strong battery structures that could withstand even direct hits by naval artillery. Mechanically operated hoists now lifted projectiles from subterranean magazines to surface gun emplacements, and embryonic telephonic and electrical systems were revolutionizing communications between various parts of the battery, the fort, and even the entire defensive area.

In 1886 the Endicott Board made its report, calling for extensive new fortification projects at 26 coastal locales. Recommendations ran from gun batteries to mortars, to

patrol boats and underwater minefields, and even massive revolving armored gun turrets. The cost for this new generation of fortifications was a then-staggering \$126 million. Not all the Board's recommendations would be implemented, but the results would still bring sweeping changes to America's coastal fortifications.¹³

The Endicott Era

Beginning in 1890, Congress began acting on the Board's report and resumed making annual appropriations for construction of coastal defenses. In 1890 and 1891, it passed acts authorizing almost \$2 million in new construction. San Francisco and New York Harbor were at the head of the list. Over the next several years, construction would proceed rapidly at these two ports that reflected their importance and the military's concern that they might be primary targets of enemy attack.¹⁴

In San Francisco, work began in 1890 on a line of new concrete gun batteries above Fort Point, where ground was broken for a 10-inch disappearing gun emplacement in what eventually became Battery Marcus Miller. Before long, additional batteries were being constructed at the Presidio (the western portion of which had been formally named Fort Winfield Scott in 1882) mounting a variety of large caliber guns, rapid-fire weapons and mortars. The best location for many of these emplacements was the bluff occupied by West Battery, and by 1900 five different Endicott batteries had been built atop its earthworks.

These new works along the bluffs were eventually designated Battery Godfrey (completed in 1896), Battery Marcus Miller (1897), Battery Lancaster (1898), and Battery Cranston (1897). These fortifications obliterated every trace of the 1870s gun emplacements for 15-inch caliber Rodmans, but a handful of underground service magazines in truncated traverses were incorporated into the new batteries.

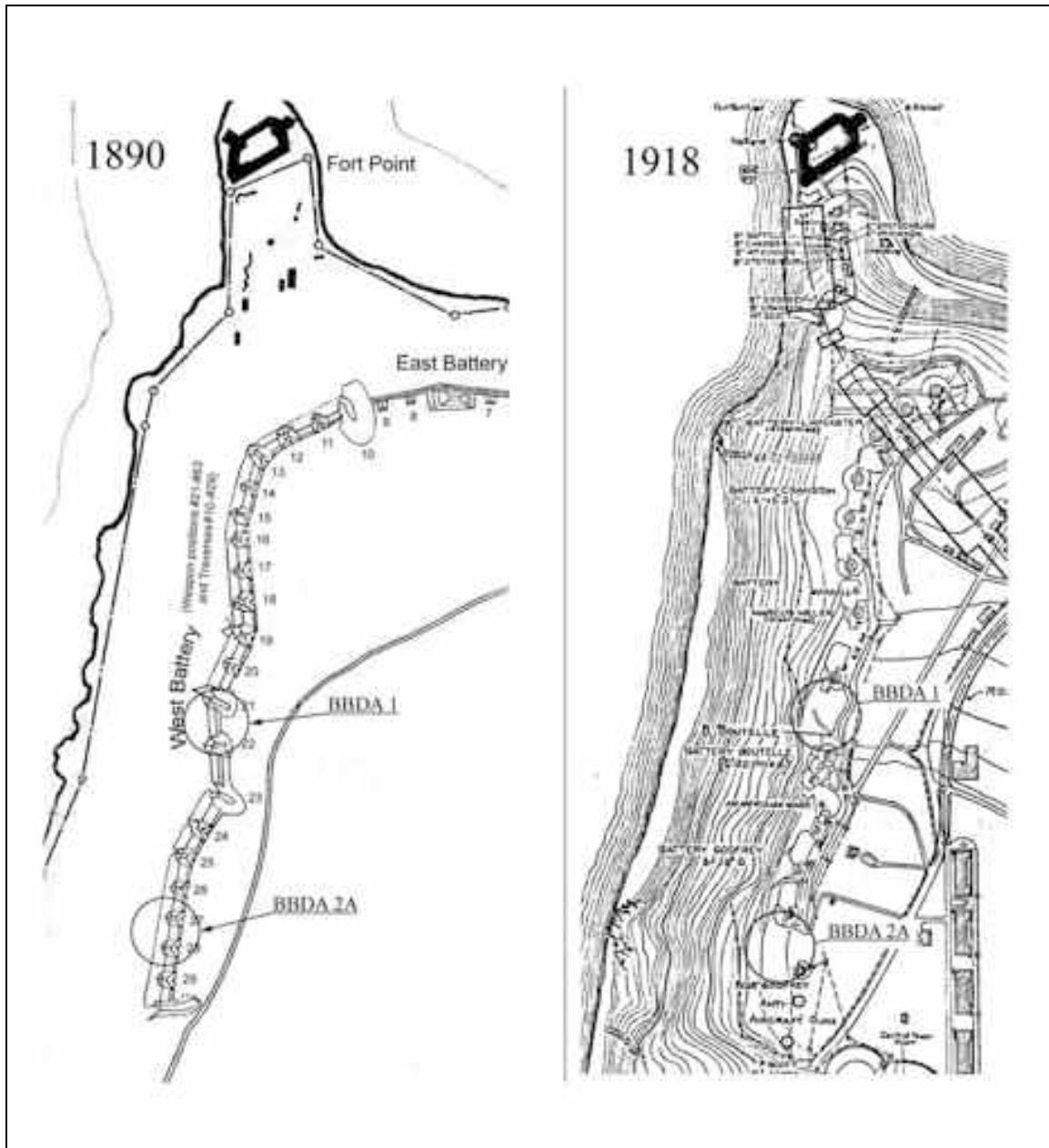


Figure 10. 'Plan of 1870' batteries (left) were supplanted by Endicott-era batteries at Fort Scott during the late 1890s. Circled areas indicate contemporary remediation sites.

It should be noted that in their earliest form, the completed Endicott batteries lining the Fort Scott bluffs extended only as far south as Battery Godfrey. Until 1900, there were no additional fortifications in the current project area located south of Battery Godfrey's emplacement #3. (Note: Several other Endicott batteries were constructed at Fort Scott during the 1890s but all were located outside the current project area.)



Figure 11. Endicott batteries at Fort Scott along the former location of West Battery, c1910. From left to right are Batteries Boutelle, Marcus Miller, Cranston and Lancaster. A portion of a trapezoidal 1870s traverse (West Battery #21) is visible between Boutelle and Marcus Miller (GOGA, PARC, Interp Coll)

The artillery pieces installed in this first burst of Endicott activity were heavy-caliber weapons, either 10-inch or 12-inch rifles, capable of firing projectiles weighing upwards of half a ton more than eight miles out to sea. They were designed to duel with the heaviest warships of the time – battleships and cruisers – but for all their firepower they were hampered by a slow rate of fire that made them unable to deal with small, fast-moving targets such as motor torpedo boats.

These early Endicott works were typified by two-story construction, with the guns located on upper level firing platforms while ammunition storage magazines sat below ground, protected by dozens of feet of overhead concrete and earth cover. Soldiers raised the heavy projectiles to the surface for loading, initially by a complex system of hand-operated davits and lifts and, later, on electrically powered elevators.

Shortly after the end of the Spanish-American War in 1898, work began on the next phase of implementing the Endicott Board's recommendations for San Francisco: construction of rapid-fire batteries along the Fort Scott bluffs mounting relatively small

5- and 6-inch caliber guns that could deal with the threat posed by fast but lightly armored torpedo boats. The first of these was Battery Boutelle, located between Marcus Miller and Godfrey, which mounted three 5-inch guns and was completed in 1900.



Figure 12. A 12-inch rifle in Battery Godfrey at the moment of firing, c1915. The brick entrance to West Battery's magazine #27, integrated into Godfrey's earthworks, is visible at lower left. (GOGA, PARC)

Further down the bluffs, Battery Crosby was also completed in 1900. It mounted two 6-inch caliber guns mounted on disappearing carriages, and was located nearly 2,000 feet southwest of Battery Godfrey. For the purposes of this report, Crosby is notable because it was the first structure completed in this part of the Presidio. To reach the new battery, the Army had to construct a switchback access road nearly a third of a mile long connecting the emplacements with McDowell Avenue, the main road through the post.

The final fortification at Fort Scott completed during the Endicott period was Battery Chamberlin in the dunes behind Baker Beach, completed in 1904. Mounting four 6-inch rifles on disappearing carriages, Chamberlin was the most remote battery in the Presidio located nearly $\frac{3}{4}$ mile from Battery Godfrey. Another new road was needed to reach Chamberlin's gun positions, and a half-mile extension leading down to Baker Beach was added to the end of the Battery Crosby access road.

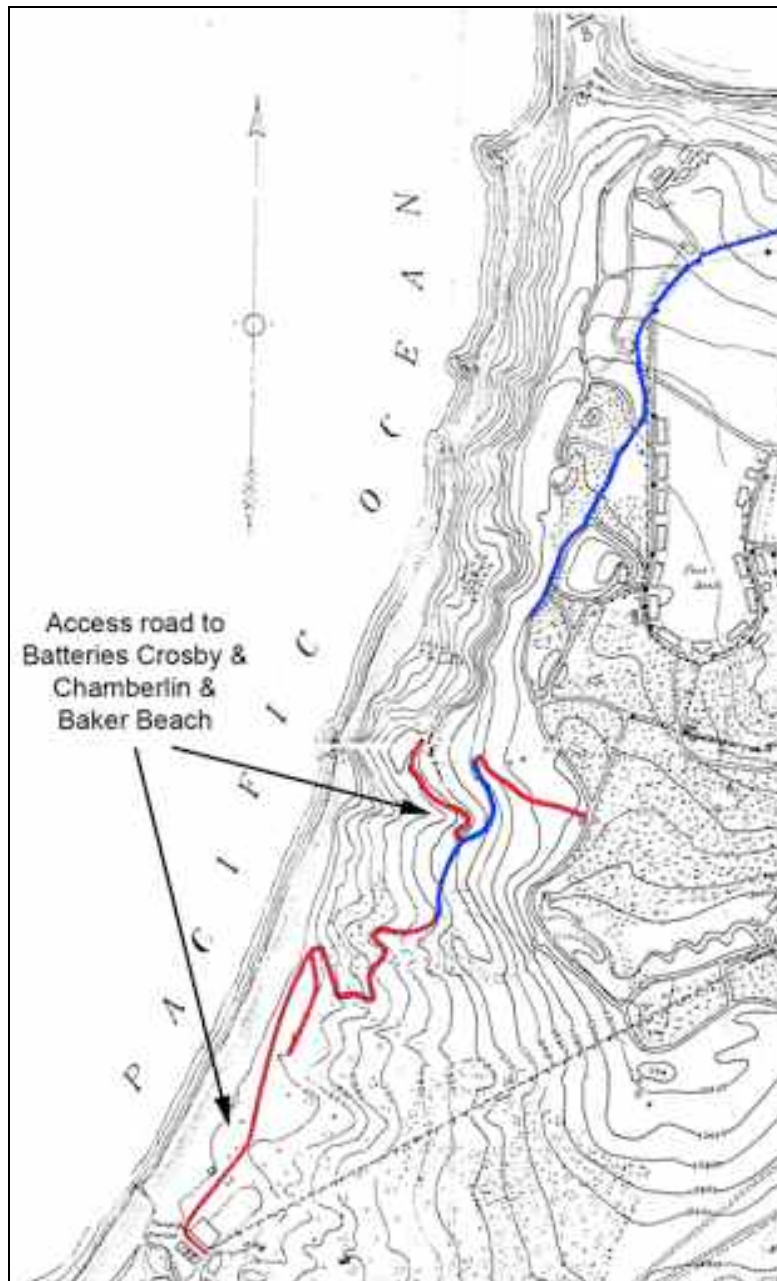


Figure 13. Access roads connecting McDowell Avenue with Batteries Crosby, Chamberlin and the fire control station and pump station at Baker Beach, 1912. The sections of McDowell and the battery access roads that were incorporated into the Lincoln Boulevard are shown in blue.



Figure 14. Battery Crosby typifies the two-story construction of an Endicott era battery. The gun was mounted in the semicircular area at right while ammunition was stored on the lower level. An ammunition hoist was located under the extended concrete canopy at center. (JAM, 2006)

A major feature of all these batteries was the use of both concrete and earth for protection of the guns and magazines. Concrete provided obvious protection against enemy shellfire, but it is seldom recognized today that three feet of earth or sand gave the same protection as a foot of concrete. And earth was much cheaper. As a result, Endicott era battery included earthworks that might extend more than a hundred feet out from a gun emplacement, usually in front of the weapon but sometimes also to the sides and rear to prevent “enfilading fire”. These earthworks were equally as integral to a battery’s design as the more impressive masonry gun emplacements and magazines.

Taft Era

“In 1905, President Theodore Roosevelt appointed another board, headed by Secretary of War William H. Taft, to review and update the Endicott Program in view of the advances in electrical technology and the need to defend overseas bases acquired from Spain. The

1905 ‘Taft Report’ recommended new sites for defenses... In addition, the board emphasized electricity, searchlights and modern fire control.”¹⁵

No additional gun placements were built at Fort Scott as a result of the Taft Report (most of these would be located in overseas U.S. territories) but the Board’s recommendations still had an impact in San Francisco. The existing batteries at the Presidio were equipped with upgraded telephone equipment and modern, electrically powered ammunition hoists. Existing lighting systems were upgraded from knob-and-tube wiring to ‘armored’ cabling and explosion-proof light fixtures. In addition, new gasoline generator sets replaced the underpowered dynamos and storage batteries used at the batteries to power the interior lights. Engineers usually installed the new generators within the existing fortification structures, such as at Batteries Chamberlin and Crosby within the project area. In some cases, new power plant structures were constructed adjacent to the batteries. An example of the latter can be found on the right flank of Battery Godfrey’s emplacement #1.

The Taft Board also made recommendations for improved fire control systems, and new “Battery Commander’s Stations” were constructed at the Fort Scott batteries as part of the Taft project. These structures, all built at slight elevations overlooking the batteries, provided the commanding officers with a view of all their emplacements while keeping the commanders separated from the noise and concussion of the guns. At Batteries Marcus Miller and Cranston the new stations were integrated into, or rather atop, the existing fortifications.



Figure 15. BC Godfrey (Bldg 1644), November 2008. The roofless telephone/plotting room is at left. (JAM)

By contrast, the Battery Commander (BC) stations at Godfrey, Crosby and Chamberlin were totally separate structures built on higher ground overlooking the batteries. All three stations were constructed in a similar manner with concrete foundations and walls, and open viewing slit, and wooden roofs. Each consisted of an observation room for the commander and his staff that held a variety of observing telescopes, and an attached room for telephone booths and a plotting table. (Within the current project area, the BC stations at Chamberlin and Godfrey are still extant but the Godfrey station has suffered serious damage from fire and vandalism. The BC station at Battery Crosby has disappeared.)

Just to the south of Battery Chamberlin, in the dunes of Baker Beach, a large fire control station for multiple batteries was constructed in 1907. Unlike the BC stations described previously, this structure didn't house officer staff. Instead, it contained six separate 'base end' stations for enlisted observers assigned to batteries at Fort Scott. Unique in harbor defenses of San Francisco, the structure consisted of two identical concrete structures with wood roofs, each measuring 40'x12', and set end to each. Each structure housed three separate observing stations and crews. A concrete sidewalk with gutters surrounded

the perimeter of the two buildings, but the only protection was an earthen (or sand) berm that rose as high as the observation slit windowsills. No trace of this structure is believed to remain.¹⁶

Another Taft era development at Fort Scott was the construction of a mine control station in 1908 at Baker Beach, located midway between Battery Chamberlin and the mouth of Lobos Creek. Underwater minefields had long been a part of the Army's harbor defense strategy, and the Army Engineers had been developing the technology of electrically controlled mines (sometimes called torpedoes) since before the Endicott Board. This complex defense system consisted of dozens of buoyant underwater mines filled with TNT or dynamite and anchored to harbor bottom. The mines floated just below the surface, and a network of underwater cables connected the groups of mines to shoreside operating stations. The stations, officially called Mine Casemates, contained electrical storage batteries, switches controlling the mines, and a crew of soldiers who could detonate the mines on command.

Before 1900, San Francisco's minefields had all been located within the bay. Their mine casemates were stuffy, undersized underground room at Angel Island, Fort Baker and Fort Mason. In 1901, control of the mine defenses transferred from the Engineers to the Coast Artillery, and the minefields were physically relocated from inside the Bay to outside the Golden Gate where they could intercept an approaching enemy fleet before it could enter the harbor. As part of this new tactical location, the Army built newer and larger casemates on both sides of the Golden Gate.

Company ceased diverting Lobos Creek water and the Presidio assumed responsibility for maintaining the flume. By 1900 Lobos Creek was supplying two-thirds of the Presidio's water. Eventually the Army drilled its own wells and near the mouth of Lobos Creek and between 1910-1912 built the pump station complex still standing today to treat and pump water for the post.

In order to reach this new plant, the post engineers constructed a road across the dunes from the north end of Battery Chamberlin to the pumping station. The road, which apparently had an unpaved dirt surface, ran across the superior slope of the battery directly in front of the four gun emplacements and then continued south, passing on the west side of the Mine Casemate before terminating at the water plant.

Another non-military structure on Baker Beach was a U.S. Life Saving Service (USLSS) boathouse, constructed sometime around 1910. Located between the mine casemate and the beach, this was an unmanned station that housed a surfboat on a launching cart for use by lifesaving crews. Although not specified in any records, the boathouse was likely an outpost of either the Fort Point Rescue Station or the Golden Gate Park Rescue Station, whose crewmen would hike over the hills to Baker Beach and launch the boat in event of a shipwreck.



Figure 17. Baker Beach viewed from Sea Cliff, 1914. The USLSS boathouse is at right center. (SF Public Library, DPW Photo Collection.)

Lincoln Boulevard

Between 1915 and 1920, the major development in this part of Fort Scott was the construction of present-day Lincoln Boulevard, created by extending the original Battery Chamberlin road across an undeveloped dune area in the southwest corner of the post towards Lobos Creek. A trestle crossed the creek so the road could intersect with present-day El Camino Del Mar on city property.

In the 1860s, the nearest roadway to this remote corner of the post was McDowell Avenue, which followed the general north-south alignment of today's Lincoln Boulevard as far as the present intersection of Washington Boulevard, where it veered southeast along the route of today's Washington Boulevard.

As described previously, the first road extending south of McDowell was a service road built across the bluffs in 1898-1899 to provide access to Battery Crosby. In the early 1900s, this road (actually, a dirt track) was extended down to Baker Beach and Battery Chamberlin where it terminated in the covered way behind the gun emplacements. Sometime around 1907, an extension was built from Chamberlin nearly to Lobos Creek that provided access to a new fire control structure and mine control casemate being constructed in the dunes south of the battery. This road branched off at north entrance gate to Chamberlin and ran across the dunes directly in front of the guns. Around 1911 the road was extended all the way to the mouth of Lobos Creek when the post engineers constructed a new water treatment plant there.

Until 1915 the future Lincoln Boulevard extended no further than the gate at today's North Chamberlin Road. The development of present day Lincoln was part of a joint project carried out by the City of San Francisco and the U.S. Army to construct a scenic boulevard for motorists connecting the Marina District to the Pacific Ocean. The project was planned for completion before (or during) the 1915 Panama Pacific International Exposition that was held in the Marina, but construction was slow and the connecting road through the Presidio and across Lobos Creek was not completed until 1916.

(The rest of Lincoln Boulevard was built in stages, and when completed in 1923 the scenic drive extended through the Sea Cliff District, Lincoln Park, and around the cliffs of Land's End to Point Lobos Boulevard near the Cliff House, where it eventually merged with the Great Highway that ran the length of Ocean Beach.¹⁸ Sections of the road would across City lands be known variously over the years as Lincoln Boulevard, Harding Boulevard, Lincoln Park Boulevard and, finally, El Camino Del Mar. Only the segment through the Presidio retains its original 1915 name.)¹⁹



Figure 18. Lincoln Boulevard in 1934. The Golden Gate toll plaza appears at the top of the drawing. Compare this final alignment with the road network shown on Figures 9 and 13.

It should be stressed that the new segment of Lincoln Boulevard through the southwest corner of the Presidio originally had no military purpose, although the road eventually provided the Army with convenient access to Baker Beach and the Lobos Creek pump station, as well as creating another entry road to the post. (These may well be the reasons the military was amenable to the road's construction.)

Over the years Lincoln evolved from a 16-foot wide macadamized surface to a concrete roadway, and eventually to a two-lane asphalt road with shoulders and scenic pullouts. The only deviation from the original alignment is "New" Lincoln Boulevard, a straightaway constructed in 1942 that bypassed several curves near Baker Beach. However, the bypassed portion of the original Lincoln still survives as today's Bowley Street, making the road's original historic alignment complete.

Presidio Water Treatment Plant

Part of the Spring Valley Water Company's agreement with the Army continued to be to supply water to the Presidio free of charge, and prior to 1880 a pair of windmills had been constructed that pumped water in stages from the Spring Valley flume to an Army reservoir near present-day Rob Hill. Closer to the main post, near where the Crissy Field Center is now located, another pump station diverted fresh water to the residences, barracks and administration buildings lining the main parade ground.

Around 1893 the Spring Valley Water Company ceased diverting Lobos Creek water for the City of San Francisco, and the Presidio assumed responsibility for maintaining the flume. By 1900 Lobos Creek was supplying 2/3 of the Presidio's water. Eventually the Army drilled its own wells and near the mouth of Lobos Creek and between 1910-1912 built the pump station complex (standing today) to treat and pump water for the post. In 1915, the Army finally bought all of the Spring Valley Co.'s holdings on the south side of

Lobos Creek along with all its water rights. After the Army takeover, the wells and water of Lobos Creek eventually supplied all of the Presidio's water needs.

Several of these wells, some capped and some still in use, are located east of the water treatment plant in the area bounded by Lobos Creek, Gibson Road and Lincoln Boulevard.



Figure 19. *The Presidio water pumping plant at Lobos Creek, circa 1920. (SF Municipal Railway Coll.)*

Era VI. World War I

World War I had little effect on the project area at Fort Scott, except for a large cantonment of temporary barracks for military trainees located between Merchant Road and Batteries Marcus Miller and Cranston. However, this area is outside the present project area.

Also, this area behind the Endicott batteries has been extensively developed over the last ninety years, and the original elevation has been raised by more than 10 feet due to repeated fill operations. The former barracks area is now the site of the Golden Gate Bridge's modular office complex and employee parking lots. The former cantonment area thus has no integrity and is outside the scope of this report.

Era VII. Military Affairs Between Wars

The primary changes in the project area between 1918 and the outbreak of World War II were directly related to the construction of the Golden Gate Bridge between 1933-1937. The bridge's construction brought drastic changes to much of Fort Winfield Scott and other parts of the Presidio, but the primary impact within today's project area was the partial demolition of Battery Lancaster's emplacements 1 and 2, which were on the site of today's toll plaza. For the purposes of this study, however, the only other impacts to the project area were relatively minor. Gun batteries Cranston and Marcus Miller, only a few yards from the toll plaza, were left virtually untouched by initial bridge construction. (Cranston, in fact, retained its two disappearing guns until 1943.) The area behind the batteries was used as a temporary 'lay down' area for construction activities, but once the bridge was completed the land was returned to the Army virtually unchanged from its earlier condition.²⁰

In 1920, the Army constructed an antiaircraft gun battery consisting of two 3-inch caliber guns located on the left flank of Battery Godfrey, and adjacent to Godfrey's Battery Commander's station. Designated simply "Fort Winfield Scott Antiaircraft Battery" the emplacements consisted of a pair of simple concrete circles 18 feet in diameter with the guns located in their centers. The weapons had all-around fire, so no revetments or other protection were provided. In 1938 a third gun emplacement was added to the original pair, this time located atop one of the unfinished 1870s traverses of West Battery.²¹ By 1940, though, all three guns were removed for use elsewhere in the Harbor Defenses.²²

The Golden Gate Bridge construction resulted in not only the demolition of part of Battery Lancaster, but also the destruction of several fire control stations located on the bluff behind old Fort Point. As mitigation for their destruction, the Bridge District constructed three new fire control stations for the Army and located them on a hillside beneath the bridge and south of the new bridge anchorage. These stations, completed in

1934, and were assigned to Batteries Godfrey and Chamberlin at Fort Scott, and for the Main Channel mine fields.²³

A small signal tower was built adjacent to the anti-aircraft battery in 1934 as part of the Harbor Defenses. Measuring 96 feet tall and painted in alternating yellow and black bands, it was used for hoisting signal flags to relay messages to various units of the harbor defenses. A square concrete base 16 feet on each side anchored the mast. A red light at the top warned low-flying aircraft of its presence.²⁴

Lincoln Boulevard also underwent numerous improvements during this period, likely in anticipation of its becoming a major approach road to the Golden Gate Bridge. Some time prior to 1932 the road's original macadamized surface was replaced with a 16-foot wide concrete roadway with unpaved shoulders. No drainage was apparently provided at this time. Based on historic photos, the road was widened again before World War II, and by 1942 it had achieved its current 40-foot width. Aerial photos taken between 1933 and 1942 indicate that the road was widened along most of its length through Fort Scott, with guardrails installed in some areas and pullouts and scenic overlooks created.

One notable overlook was a triangular shaped parking lot located adjacent to the 3-inch anti-aircraft battery, which offered breathtaking vistas of the Golden Gate and its new Bridge –until tree growth obscured its views. A wide spot in the roadway immediately south of the triangular lot provided additional parking space and viewing opportunities. The origin of these two lookouts has not been determined, but they appear on historic photographs taken between 1932 and 1934. It is believed they were constructed specifically to provide scenic parking areas for motorists to pull over and view the soon-to-be-completed Golden Gate Bridge.²⁵

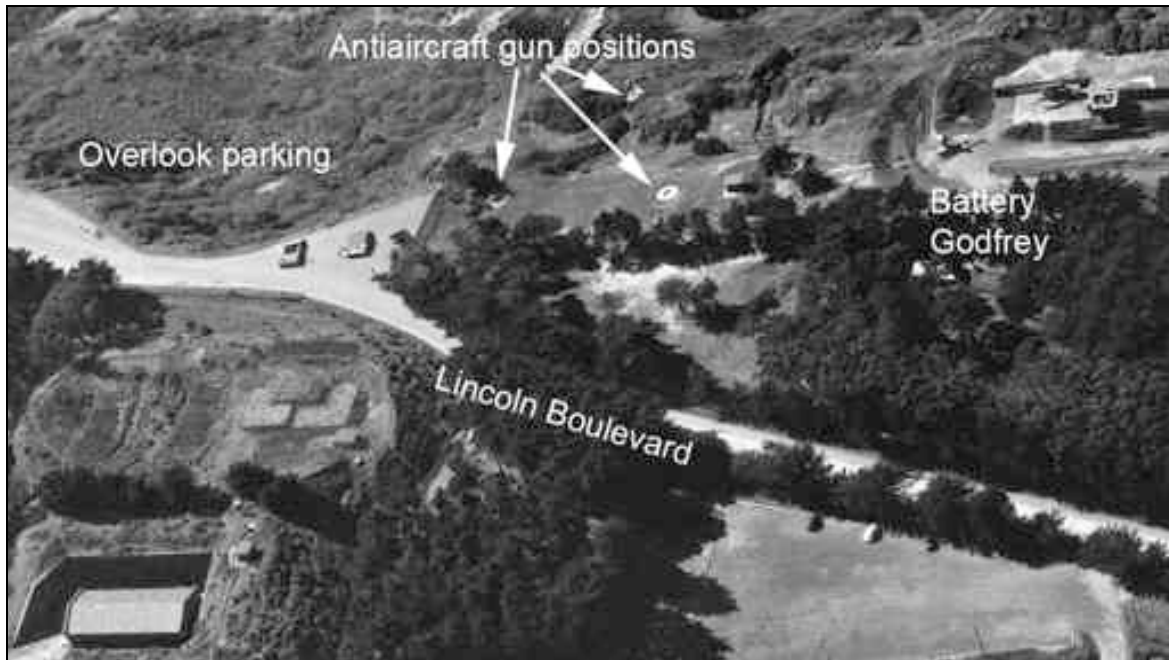


Figure 20. Aerial view showing relative locations of Battery Godfrey, the three 3-inch antiaircraft gun battery, Lincoln Boulevard, and the scenic overlooks. February 1942.(PARC, GOGA, Cooper Coll.)

Era VIII. World War II

The weeks and months following the attack on Pearl Harbor brought the greatest and most dramatic changes to the Fort Scott and its fortifications, particularly within the project area. Between December 1941 and the end of the war in August 1945, radar and searchlight sets were set up atop the Presidio cliffs, mobile antiaircraft guns emplaced in sandbagged positions, and a maze of trenches and ‘foxhole’ fighting positions dug along the bluffs. Baker Beach was seen as a likely landing spot for enemy raiding parties, and within a few days of the start of the war its beach bristled with barbed wire entanglements and machine gun positions.

Large mobile searchlights were emplaced on the bluffs in front of Batteries Cranston and Chamberlin, and generator buildings erected nearby to provide them with power. As protection against attack by enemy aircraft, a temporary radar set was erected alongside Battery Godfrey and a still-undetermined number of .50 caliber, 40mm and 90mm antiaircraft guns were emplaced along the Fort Scott bluffs.²⁶

Army doctrine at the time stipulated that the Infantry would provide defensive protection to the urban and military areas around San Francisco, but the close-in defense of the coastal fortifications was the responsibility of the troops manning the batteries. Coast Artillery troops followed standardized engineer Field Manuals to construct a variety of temporary field works close to many of the batteries.

None of the earthworks constructed adjacent to the batteries was intended to provide full protection against heavy artillery or large bombs (what was called “bombproof” protection); the underground concrete magazines and plotting rooms of the batteries could provide that type of protection. Instead, the works at Fort Scott were designed to serve three major purposes:

1. Provide defensive locations where automatic or small arms gunfire could be brought to bear on a landing party or attacking aircraft.
2. Provide troops with “splinter proof” underground protection against strafing aircraft or nearby shell or bomb hits.
3. Provide troops with shallow dugout positions that provided readily available protection that could be quickly and easily built

Many of these positions were simple “fighting positions” (frequently called foxholes) measuring about 6-8 feet long and two feet deep where one or two men could provide defensive fire with rifles. These positions could be quickly dug with the simplest hand tools, and only provided minimal protection. When time allowed, deeper and longer zigzag trenches were constructed that were reinforced with wooden sides and thwarts to keep them from collapsing. The purpose of the zigzags was to limit shrapnel damage and prevent attacking aircraft from strafing the entire length of the trench (lessons learned during World War I)/ From the air, these trenches looked like giant Vs or Ns or Ws and soon became known as “letter trenches.”

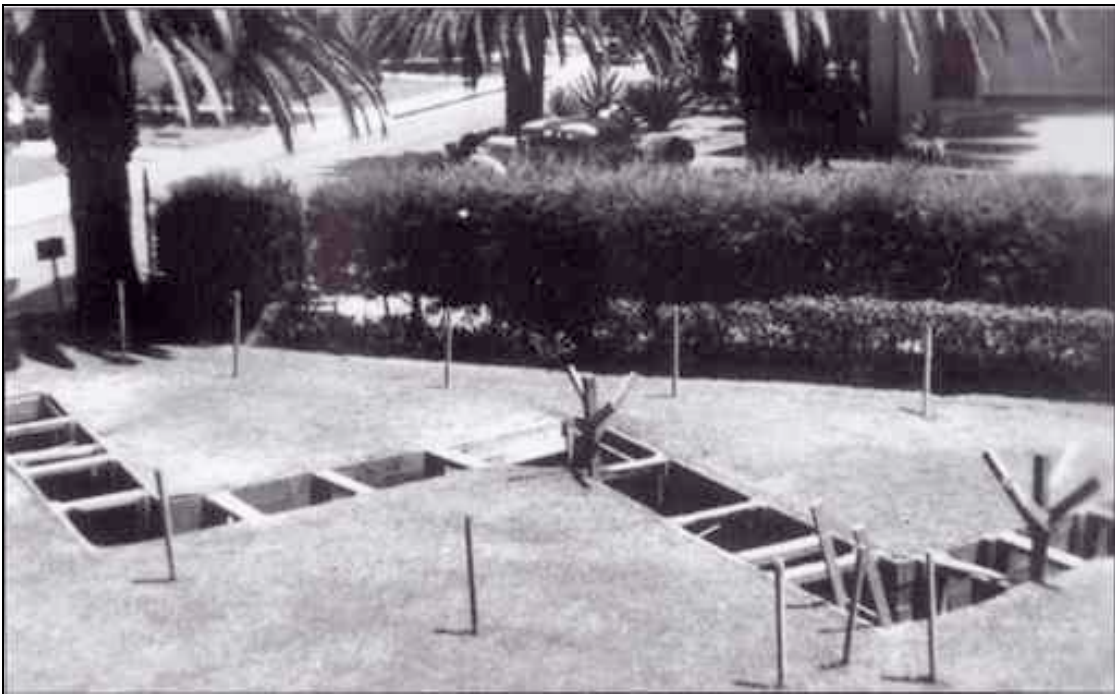


Figure 21; Close-up of a 'letter trench' at Fort MacArthur in Los Angeles. The wooden sides and cross braces, called thwarts, are clearly visible in this view. (Fort.MacArthur Museum Assoc.)

Larger positions were constructed for .30 caliber and .50 caliber automatic weapons that could fire against both land targets and aircraft. Frequently, these automatic weapons positions were provided with removable roofs that both protected the weapons and camouflaged them from observation. In some areas the troops constructed much deeper trenches and even underground huts using a resource the Presidio offered in abundance: eucalyptus trees.



Figure 22. *Trenches at Fort Scott lined with eucalyptus logs, circa 1942. (GOGA, PARC, TASC Coll.)*

Battery Chamberlin at Baker Beach was the nearest fortification to the water's edge, and thus vulnerable to commando raiding parties, and its sandy forward slopes soon blossomed with an amazing variety of fighting positions, trenches, and camouflage nets. An excellent photograph of Chamberlin taken in February 1942 (below) shows the

battery surrounded by a maze of fences, fighting positions and letter trenches, and the entire structure and its approach roads are concealed with camouflage nets.



Figure 23. Battery Chamberlin in February 1942. Camouflage nets cover the gun positions and roads. The zigzag forms in front of the battery are trenches dug by the troops for close-in defense. (PARC, GOGA, Cooper Coll.)

Very few of these temporary defensive works were formally documented on military plans or drawings since they were constructed under the supervision of local battery commanders, not the U.S. Corps of Engineers or the Presidio's own Post Engineers. The best documentation of the extent and design of these temporary works is found in period aerial photographs. By their very nature, these earthworks were short-lived and quickly succumbed to the elements once the war ended. Very little is left of most of these emergency fighting positions, since their wooden sides have long since collapsed or been buried. (Photos taken after the war show grading activity on the sites of some of the field works that indicates bulldozers may have been used to fill in the positions.) Their locations are generally only indicated today by suspicious landforms, which indicate past construction activities, or lonely gun mounts sticking up from the sand.



Figure 24. *Left. Two soldiers operating a .30 caliber machine gun in a temporary emplacement above Baker Beach. The Lincoln Boulevard guardrail and barbed wire entanglements are visible in the background. (GOGA, PARC, Interp Coll) Right. The same machine gun position in 2008. (JAM)*

In 2004, a crew clearing brush in front of Battery Crosby uncovered a complex of several extremely well preserved fighting positions. The positions were scattered irregularly across the forward slope of the battery, and likely served as defensive sites where soldiers would take up position against attackers climbing the cliffs in front of the battery. Some of the oval-shaped earthen depressions still retained remnants of the planks that originally lined their sides.

Further in front of the foxholes, the workers also uncovered a hexagonal shaped concrete machine gun position on the point of the bluff, clearly positioned so it could fire down onto the sands of Baker Beach below. Documentation is lacking, but it's likely this was a pre-prepared gun position constructed before the outbreak war. Similar examples have been found at Fort Barry and Fort Funston.



Figure 25. The hexagonal concrete machinegun position overlooking Baker Beach. (NPS)

Troops were required to be able to man and fire their weapons on a five minute notice, so the Coast Artillery troops erected tents and other temporary shelters close by the batteries to be ready to go into action. However, the soldiers were careful to shelter these facilities from observation by utilizing tree cover and generous amounts of camouflage nets. LIFE magazine ran a story on the harbor defenses of the Pacific Coast in late 1941, and although the writer did not stipulate the location, many of the accompanying photographs were clearly taken in and around Battery Chamberlin. One photograph shows a camouflaged mess kitchen in what appears to be the dune area directly east of the battery.



Figure 26. Mess tent under camouflage nets near Battery Chamberlin. Photo taken by Ralph Stackpole for LIFE, December 1941. (Time-Life Publications)

By 1943, several complexes of temporary barracks and support structures such as latrines and garages had been erected at several sites for use by the troops, likely to provide them with more adequate living quarters than the tents and dugouts where they had been huddled since the attack on Pearl Harbor. A pair of wooden barracks connected by boardwalks was located directly outside the main (north) gate Battery Chamberlin. South of the battery, four barracks and latrine were built close to Lincoln Boulevard near the site of the future New Mine Casemate. Another four barracks were built just outside the Old Mine Casemate. Also, an undetermined number of barracks were constructed south of Battery Godfrey near the former antiaircraft battery.

Built of the simplest materials (including tarpaper exteriors) and resting on simple concrete pier blocks, these structures vanished virtually without a trace after the war, although their brief existence is documented on historic maps from the era.²⁷

Permanent fortification construction also took place during the war. One of the most visible structures was a two-story signal tower located on top of Battery Cranston directly next to the Golden Gate toll plaza. This tower, operated by U.S. Navy observers, was completed in 1943 as part of combined Army-Navy defenses of the harbor entrance and contained a downstairs generator room and an upstairs observation room. A signal mast for hoisting signal flags topped the structure.

In 1943 the Army erected a radar station on the small hill partway between Battery Chamberlin and Battery Crosby. The station was technically called a Signal Corp Radio (SCR) 296 set #6 and consisted of a 70-foot tall tower supporting the radar antenna, two generator buildings, an operating room, and an additional utility building. The station was part of the Coast Artillery's extensive range finding system established along the Pacific Coast during the war, and was used for determining ranges to targets at sea. The primitive set provided aiming directions for Battery Chamberlin's 6-inch guns, which protected the minefields at the entrance to the Golden Gate.²⁸

The last permanent fortification at Fort Scott was a dual-purpose gun battery mounting two 90mm artillery pieces that could fire either at ships or low-flying aircraft. Located in the dunes between Battery Chamberlin and the Old Mine Casemate, the 90mm installation was simply named "Battery Baker" after its location. Completed in 1943, it was architecturally unimpressive and its two guns sat on exposed concrete circles atop the dunes overlooking the beach. A small BC station for the battery was built atop the Old Mine Casemate a few yards to the south of the guns.

The largest project undertaken during the war within the project area was the construction of a new, expanded Mine Casemate for the minefields outside the Golden Gate. Located 300 feet northeast of the existing 1907 casemate, the "Combined Mines MII & MIII"

casemate provided facilities for two separate minefields: the ones planted in the Main Channel leading to the Golden Gate (tactically designated Mine Command II) and the minefields protecting the South Channel along Ocean Beach (designated Mine Command III).

The new structure, completed in 1944, was essentially two mirror image mine casemates in one combined structure that shared a common entryway and power plant. It was more than four times the size of the older structure and contained operating rooms/switchboard rooms for the minefields, a large power plant, twin air locks, ventilation systems, crew living spaces, water tanks, fuel oil tanks, latrines, and even escape hatches leading up to the dunes.²⁹

Follow the end of World War II, the U.S. Army transferred control of all its minefields and their supporting shoreside facilities to the U.S. Navy, including the new Combined Mine Casemate. When the Navy ceased maintaining the minefields in the early 1960s they abandoned the casemate virtually intact, removing only the control panels that monitored and fired the mines. The “New” Mine Casemate remains in a remarkable state of preservation between the north Baker Beach parking lot and Bowley Road, and still retains its complete power plant, air lock mechanisms, and many interior fixtures.³⁰

Era IX. Cold War

The years following the end of World War II saw few major changes in the project area prior to the transfer of this part of the Presidio to the National Park Service in the 1970s. Shortly after war's end the Army began removing the complexes of temporary buildings that had sprung up at Baker Beach and near Battery Godfrey. Trenches and machine gun positions that had been laboriously constructed by the Harbor Defense soldiers were either filled in or allowed to return to their beachfront elements. The major caliber Endicott gun batteries near the Golden Gate Bridge toll plaza had all been disarmed during the war, and by 1948 even the smaller 6-inch guns at Battery Chamberlin and the 90mm dual-purpose guns at Battery Baker had been removed. At some undetermined date, the Army also demolished the six-station fire control structure at Baker Beach. The SCR 296 radar station and its tower and support structures were similarly demolished, leaving behind only the concrete support pylons and the foundations for its two powerhouses. Maps of the post prepared in the late 1950s show that one of the radar buildings was being used for awhile as a "gas chamber" where soldiers undergoing chemical warfare training were exposed to tear gas as part of their orientation.³¹

Salvage Area

Sometime prior to 1954, the Army converted the empty 1870s gun pits at the south end of West Battery into a salvage and dump area. This dumpsite also included the historic sunken roadway behind the never-armed Rodman gun positions. The "Salvage and Dump Area" was designated the post's Zone 1300 and included a Salvage Shop in the former Rodman gun positions and large bins where recyclable materials could be dumped by arriving trucks. A survey of the area prepared by the Army's 663rd Engineer Topographic Co. in 1954 shows the salvage shop, large bins labeled "Metal" and "Tin Cans", another identified bin, and a "pickup road" for service vehicles covering this part of the project area.³²

Historic photographs show that a secondary road was also built around this time that allowed vehicles to make a circular loop through the salvage zone. The new road, sometimes called Dove Court, was constructed on the west side of the 1870s traverse magazines. The salvage shop itself was a rectangular building nestled between the last two traverses (originally #28 and 29) of West Battery. (See figure 28.)



Figure 28. Aerial view of the Fort Scott salvage area, 1961. A flat-roofed salvage shop and recycle bins are at upper right. The forward earthen slope of Battery Godfrey at lower left has been removed and replaced by pile of discarded wood. (PARC, GOGA, TASC Collection, Box 2)

NIKE Administration Building

The last permanent structure built within the project area prior to its transfer to the National Park Service was Building 1648, located immediately behind Battery Godfrey. Constructed in 1956, this undistinguished cinderblock building was originally designated “AAA Battalion, Headquarters Facilities, Administration Building” and served as part of the Air Defense Artillery’s western region NIKE missile command headquarters at Fort Winfield Scott. As part of this construction project, two of the Endicott era magazines of

Battery Godfrey were converted into workshops that supported activities within the Administration Building.³³

Parking Lots

At an unknown date prior to 1970, the Army created three dirt-paved parking lots in the project area. The first was located on the forward slope of Battery Godfrey, apparently after the area ceased being used as a recycling and salvage area. (See Figure 28.) This area is referred to today as Fort Scott Overlook.

The second parking lot was created by grading a flat area between the Old Mine Casemate at Baker Baker and the Lobos Creek Water Treatment Plant. This lot is sometimes referred to today as the South Baker Beach parking lot.

The last parking lot was created by grading the top of the dunes between the Old Mine Casemate and the cyclone fence enclosing the south end of Battery Chamberlin. This lot is sometimes referred to today as the North Baker Beach lot. In their original form, both lots at Baker Beach were very informal, and took the form of flattened and compacted dirt and sand strips just behind the dunes overlooking the beach. The number of vehicles that could be accommodated in these lots varied based upon visitor demand and the willingness of beach goers to risk getting stuck in the sandy border areas of the lots.³⁴

Also, at around this same time, a new gate was added to the Battery Chamberlin fence that allowed vehicles to access to the battery via its southernmost gun position. (Originally emplacement #4.) To create this additional entrance, the large earthen berm to the south of gun #4 was removed and a road cut through its former location. This is the entrance currently used by NPS personnel and visitors to the battery, while the original entrance at the north end of the battery and its approach road leading down from Lincoln Boulevard is only infrequently used for service vehicles.

Both lots remained in an unpaved condition until Baker Beach was transferred to the Golden Gate National Recreation Area in 1975. Shortly after the NPS assumed responsibility for Baker Beach both lots were expanded in size, re-graded and paved in asphalt. Visitor amenities including garbage cans, benches, water fountains, and temporary toilets were installed. Behind the north parking lot, the park constructed a large picnic ground adjacent to – and partly on top of – the New Mine Casemate.



Figure 29. Aerial view of Baker Beach circa 1970. Battery Chamberlin is at left and the Presidio water plant at extreme right. Parked cars indicate the two unpaved lots created by the Army. The new entry road through the earthworks of Battery Chamberlin is also visible (GOGA, PARC, TASC Coll)



Figure 30. The same area in 2006. The two paved parking lots constructed by the NPS are clearly visible. (Google Earth)

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⁶ Martini, John A. *Battery Cavallo: Special History Study*, San Francisco: National Park Service, 1999.

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⁸ *Annual Report of Progress made in the Construction of Fort at Fort Point in Fiscal Year 1873*, NARA, RG 77, Letters Rec'd, Chief Engineer. Positions occupied by Rodmans were Nos. 21-30, 36 and 37.

⁹ Williford, pp 7-8

¹⁰ Col. George Mendell, Project Engineer, to Chief Engineer, 7 July 1890, NARA, RG 77, Letters Rec'd, Chief Engineer

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- ¹³ Bearss, p. 287
- ¹⁴ Bearss, p. 288
- ¹⁵ McGovern & Smith, p. 13
- ¹⁶ Drawing, *Drainage and Conduit Leads for Fire Contro Stations at "H" Bakers Beach, Fort W. Scott*, September 1907. GOGA, PARC, Drawer 287, Folder 2
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- ²² Haller, Stephen and Martini, John. *Ordinance Plan for Golden Gate National Recreation Area*. San Francisco, National Park Service, 1996
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- ²⁵ Photographs from the National Archives Still Pictures Branch and the collection of the Golden Gate Bridge Authority.
- ²⁶ *Annexes*, 1945
- ²⁷ Drawing, *Fort Scott, California, Housing – Facilities Location Plan & Electrical Service*. December 1, 1943. PARC, GOGA, Drawer 282, Folder 2
- ²⁸ RCW, *SCR 296, Fort Scott, California*. U.S. Engineer Office, San Francisco, #7-2-92. Undated.
- ²⁹ RCW, Part II, *Combined Mine Casemate MC-2 & MC-3*. Corrected to December 1943.
- ³⁰ Site visit to Combined Mine Casemate by author, 2005.
- ³¹ Drawing, *Battery Chamberlin*, 1961. PARC, GOGA
- ³² Drawing, *Special Map for Re-Design of Salvage & Dump Area Zone 1300*. July 1954. GOGA, PARC, Drawer 283, Folder 4
- ³³ Drawing, *"AAA Battalion, Headquarters Facilities, Administration*. 30 sheets. 7 September 1956. GOGA, PARC, Drawer 110, Folder 1
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Battery Baker, 90mm gun positions

Battery Boutelle

Battery Lowell A. Chamberlin

Battery Crosby

Battery Godfrey

Battery Marcus Miller

Fort Point NHS Drawing Collection

Harbor Defenses of San Francisco/Fortifications Drawings Collection

Historic Map Collection, Presidio of San Francisco

“New” Combined Mine Casemate, various drawings

“Old” Mine Casemate, Baker Beach, various drawings

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Norman Peddicord

Peter Tirpik

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3. *On-line research sources:*

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4. *Collections at National Archives II at College Park, Maryland:*

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5. *Other Photo Collections:*

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